



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/004,815

12/07/2001

Romel Amineh

042933/301642

7745

826

7590

04/19/2006

ALSTON & BIRD LLP  
BANK OF AMERICA PLAZA  
101 SOUTH TRYON STREET, SUITE 4000  
CHARLOTTE, NC 28280-4000

EXAMINER

DANG, HUNG Q

ART UNIT

PAPER NUMBER

2612

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/004,815

**Applicant(s)**

AMINEH, ROMEL

**Examiner**

Hung Q. Dang

**Art Unit**

2635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/30/2005</u> | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This communication is in response to application's amendment dated 12/30/2005. The amended claims 1, 14, 16, 20-25 and the canceled claims 2-5, 9, 10, 18 have been entered.

### *Response to Arguments*

2. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 6, 11, 12, 14-17, 19-23, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helm U.S. Patent 5,835,388 in view of Acevedo U.S. Patent 5,818,361.

**Regarding claim 1**, Helm teaches a communication unit including a digital control with associated random access and read only memory for control of said communication unit, which includes a plurality of key elements. Said key elements are being controlled by said digital control, and where said elements are used in the user interface of said communication unit.

However, Helm does not teach said key elements being intra-changeable elements, which are defined by having a physical characteristic that is changeable responsive to said digital control.

Acevedo teaches a user interface device, which includes a plurality of keys, which are intra-changeable elements being defined by having a physical characteristic that is changeable responsive to a digital control. To be specific, intra-changeable elements disclosed by Acevedo are adapted to change color to further differentiate between alphanumeric characters and keys that have functions that differ such as in the application of games (column 4, lines 1-24).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide a user interface unit to the communication unit disclosed by Helm, wherein said interface unit includes keys that are being intra-changeable elements having a physical characteristic that is changeable responsive to a digital control, as evidenced by Acevedo, so that said keys (or intra-changeable elements) can be adapted to change color to further differentiate between alphanumeric characters and keys that have functions that differ such as in the application of games.

**Regarding claims 6, 15 and 17**, the key elements disclosed by Helm are also compressible and expandable (Figure 7, the shown keys are compressed when they're pressed by the user's finger, and expand when they're released).

**Regarding claims 11, 22 and 23**, the intra-changeable elements disclosed by Helm in view of Acevedo are also included in both an input and output device (Keys in figure1 of Acevedo reference are considered as both an input and output because the

displays on said keys outputting visualization of the indicia of said keys to the user) of said communication unit, and said processor modulates said intra-changeable elements wherein said input and output device is a cover part of the communication unit (Figure 7 of Helm reference, the keyboard of said communication unit is indeed the cover part of said communication unit).

**Claims 12, 14, 16, 20, 21 and 25** are similarly rejected for the same reasons as claim 1. The intra-changeable elements (keys) disclosed by Helm in view of Acevedo are also changeable to provide a sensory indication of the keys available to make the communication unit perform an action by pressing said changeable keys.

**Claims 19 and 26** are similarly rejected for the same reasons claim 1. The intra-changeable elements (keys) disclosed by Acevedo, when pressed, generates a control signal (depending on what mode is selected by the switch 22, paragraph bridging columns 4-5) in response to a change in characteristics and wherein the communication device further comprises a transmitter (the electronic equipped with keys in the keyboard 11 is considered as transmitter for transmitting key code when a key is pressed) for transmitting control signals generated by the changeable element in response to a physical deformation.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Helm U.S. Patent 5,835,388 in view of Acevedo U.S. Patent 5,818,361 and in further view of Nomura et al. U.S. Patent 6,700,508.

**Regarding claim 7**, Helm in view of Acevedo teaches a communication unit provided with intra-changeable element according to claim 1, **except** wherein said intra-changeable elements are piezo-electrical elements.

Nomura et al. teaches a keyboard unit for use in a user interface input device. Said keyboard unit is capable of making the user feel a large stroke of a key top when a key is pressed by using piezo-electrical elements (column 1 lines 38-41 and column 2 lines 39-50).

Therefore, it would have been obvious to one skill in the art at the time the invention was made to equip the intra-changeable elements disclosed by Helm in view of Acevedo, as evidenced by Nomura et al., so that the user can feel a large stroke of a key top when a key is pressed.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Helm U.S. Patent 5,835,388 in view of Acevedo U.S. Patent 5,818,361 and in further view of Takala et al. U.S. Patent 6,788, 294.

**Regarding claim 8**, Helm in view of Acevedo teaches a communication unit provided with intra-changeable elements according to claim 1, **except** wherein said intra-changeable elements are made of elasto-resistive materials.

Takala et al. teaches a method for implementing a key, wherein the key is made up of material whose electrical conductivity is responsive to pressure, so called ER material or elasto-resistive material, so that the position of pressure applied to the material can be determined by means of a conductor connected to the material (column 2, lines 40-48).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide the intra-changeable elements (keys) disclosed by Helm in view of Acevedo with elasto-resistive materials, as evidenced by Takala et al., so that the position of pressure applied to the material can be determined by means of a conductor connected to the material.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Helm U.S. Patent 5,835,388 in view of Acevedo U.S. Patent 5,818,361. *further in view of Schmucker*

**Regarding claim 24**, claim 24 is similarly rejected for the same reasons as claim

1. However, Helm in view of Acevedo does not teach said input device is a four-way-scroller.

Schmucker teaches a key input unit for use in a communication unit, wherein said key input unit is a four-way-scroller, so that said communication unit is capable of commanding four directions (column 1, lines 58-61).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide a four-way-scroller to the communication unit disclosed by Helm in view of Acevedo, as evidenced by Schmucker, so that said communication unit would be able to provide commanding four directions.

#### ***Allowable Subject Matter***

8. Claim 13 is allowed.

**Regarding claim 13**, the prior arts of record fail to teach or disclose a method for transferring an input from a first communication unit to a second communication unit,

and displaying said input as output in said second communication unit, wherein operation of said first communication unit includes transforming the input from said intra-changeable elements of said input device to electrical signals; transferring said electrical signals from said first communication unit to a second communication unit; and wherein said second communication unit includes receiving said electrical signals from said first communication unit to said second communication unit; retransforming said electrical signals in said second communication unit to output signals to intra-changeable elements of said second communication unit; and transferring said output signals to said intra-changeable elements of said second communication unit and expand said intra-changeable elements according to said output signals.

### **Conclusion**


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Q. Dang whose telephone number is (571) 272-3069. The examiner can normally be reached on 9:30AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (571) 272-7308. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hung Q. Dang  
4/13/2006  
H.D.



WENDY R. GARBER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600